



January 28, 2001  
Interim Letter I  
HETA 2001-0445

Centers for Disease Control  
and Prevention (CDC)  
National Institute for Occupational  
Safety and Health - ALOSH  
1095 Willowdale Road  
Morgantown, WV 26505-2888

Mike Winkler  
President  
Administrative and Residual Employees Union  
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Newington, Connecticut 06111

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Dear Mr. Winkler:

On July 17, 2001, the National Institute for Occupational Safety and Health received a health hazard evaluation request from the Administrative and Residual Employees Union Local 4200 representing office workers at 25 Sigourney Street in Hartford, CT. Workers reported respiratory and dermatological conditions that they perceived to be building related. Symptom onset spanned several years with an increase in symptoms and frequency of complaints since the fall of 2000.

The building houses two state agencies: the CT Department of Revenue Services (DRS) and the Department of Social Services (DSS). Approximately 1,300 people work in the building. The building is owned by the State and managed by the Tunxis group for the Department of Public Works (DPW).

The facility is a 20-floor building with parking garages on the bottom four floors and a lobby/cafeteria/mezzanine area with some offices on the 5<sup>th</sup> floor. There is a history of water incursion on the upper four floors of the building. Currently, remediation of the water-damaged wallboards and carpet is in progress. There has been documented post hire onset of asthma, hypersensitivity pneumonitis, and sarcoidosis, with cases being relocated to another facility.

NIOSH staff conducted a preliminary site visit on July 26, 2001. We met with representatives of four employee unions (A&R, CEUL, CSEA and AFSCME), the Connecticut Department of Public Works, the Department of Revenue Services, the Department of Social Services, the Connecticut Department of Public Health, the Department of Labor, the Division of Occupational and Environmental Medicine at the University of Connecticut, Environmental Services, Occupational Risk Control Services, and Tunxis Management. NIOSH staff toured the facility, interviewed employees, and obtained copies of environmental reports regarding the building. We conducted a follow-up visit September 11-14, 2001, to administer a short health questionnaire. This report summarizes the results and preliminary conclusions drawn from the health questionnaire.

Overall, 12% of the participants in the building reported having current asthma. In 2000, the prevalence of current asthma was 7.2% nationally and 7.8% in Connecticut (MMWR, 2001). Of

the participants, 5.6% reported currently having asthma, which developed after they moved into 25 Sigourney Street. The results indicate that there is an excess of asthma and other lung disease among occupants of the building (see Appendix A for detailed results for DRS and Appendix B for detailed results for DSS). Recommendations are not possible until further study.

This interim letter is the beginning of a series of communications regarding our assessment of your workplace.

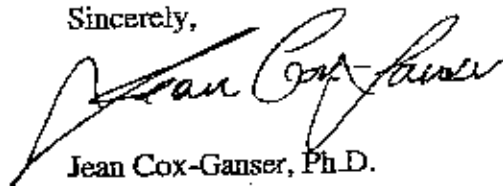
The goals of our assessment will be to:

- understand the causes of the excess of respiratory disease
- assist in decisions regarding remediation
- assess severity of illness among building occupants
- evaluate the effectiveness of interventions

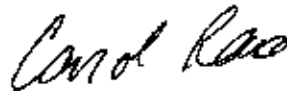
We will meet, with you and the other parties involved, soon to discuss specific approaches. Our assessment will not include medical screening for all building occupants. It is important that individuals with persistent respiratory symptoms seek medical attention to evaluate whether or not they have a building-related condition that requires action while remediation of the building is underway.

If you have any questions regarding the information provided in this letter, do not hesitate to contact us at 1-800-232-2114.

Sincerely,



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Epidemiologist



Carol Y. Rao, Sc.D.  
Industrial Hygienist  
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cc:

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References:

MMWR "Self-reported asthma prevalence among adults — United States, 2000", Morbidity and Mortality Weekly Report 50(32):682-686, 2001.

## **Appendix A - Results for DRS Questionnaire Survey September 11-14, 2001**

### **Questionnaire Administration:**

The questionnaire (Appendix C) was offered to all current employees and was administered to groups of about 50 employees at a time. DRS staff scheduled the groups of employees. During each group session, NIOSH staff described the purpose of the survey, the consent process, and reviewed each question on the survey using overhead transparencies as the participants completed them. Staff from the Division of Occupational and Environmental Medicine (DOEM) at the University of Connecticut and the Connecticut Department of Public Health assisted with the survey. DRS provided time for employees to complete the survey and provided conference room space. The questionnaires were brought back to Morgantown, West Virginia and scanned into a computer database.

### **Results:**

#### **Participation:**

Of the DRS employees offered the survey, 77% (520 of 671) participated. Of the 520 employees who completed the survey, 43% were male and 57% female. Their average age was 44 years and they had worked in the building for an average of nearly six years. Forty percent reported having ever smoked and 15% smoked at the time of the survey. (Table 1a).

#### **Reported respiratory disease**

Of the DRS participants in the survey, 18% reported ever having asthma and 13% reported current asthma. However, 22% indicated that they currently use asthma medication. Of the 66 currently asthmatic employees in DRS, 36 reported developing their asthma after beginning work in the Sigourney Street facility. These are referred to as having "post occupancy current asthma." Four individuals reported having a physician diagnosis of sarcoidosis, and 7 report having hypersensitivity pneumonitis. Table 2a provides further details regarding the prevalence of these conditions among DRS employees occupying the building.

#### **Reported symptoms**

Employees were asked whether they had experienced a variety of symptoms which can be associated with asthma, other lung diseases, rhinitis or sinusitis, and irritation of mucus membranes. Table 3a lists all the symptoms and indicates the percentage of individuals reporting that they had experienced these ever in the last 12 months, more recently and frequently (once or more per week for the past four weeks), and whether they perceived these symptoms to be better when they were away from the building.

Up to 25% of DRS employees reported one or more lower respiratory tract symptoms (i.e. first six symptoms in Table 3) that had occurred in the past month at least once per week. One fourth noted wheezing or chest tightness which had occurred in the past twelve months and improved away from the building. More than 40% noted nasal symptoms in the last four weeks. One third noted sinus problems in the past twelve months, which improved when they were not in the building. A substantial number of individuals noted symptoms that improved when away from work.

#### Distribution of symptoms within the building

We examined the distribution of symptoms within the building. Table 4a demonstrates the number of individuals with three or more lower respiratory disease symptoms (wheeze, chest tightness, shortness of breath attacks, coughing attack, awakened by breathing difficulty, and shortness of breath when hurrying on level ground or walking up a slight hill) by floor occupied by DRS. Between 39 and 50% of participants on each floor reported three or more of these symptoms occurring the past 12 months. Between 53 and 74% also reported one or more systemic symptoms, which include fever and chills, and flu-like achiness.

Table 5a demonstrates the number of individuals with nasal and sinus symptoms by floor. Between 73% and 90% of participants on each floor reported nasal symptoms. Between 48% and 83% of the participants reported sinus symptoms in the last 12 months.

Table 1a. Demographics of DRS participants. (Total = 520)

Gender	
Male	43%
Age (mean $\pm$ SD) years	44 $\pm$ 8.4
Smoking	
Ever	40%
Current	15%
Tenure (mean $\pm$ SD) years	5.9 $\pm$ 1.6

Table 2a. Physician diagnoses and medication use among DRS participants. (Total = 520)

	Number (%)
Physician Diagnoses	
Asthma	94 (18)
Current asthma	66 (13)
Post-occupancy current asthma	36 (7)
HP	7 (1)
Sarcoidosis	4 (1)
Medications <sup>a</sup>	
Asthma medications	115 (22)
Antihistamines	164 (32)

<sup>a</sup> Used in the past 12 months.

Table 3a. Reported symptoms among DRS participants.

	Once or more per week in the last 4 weeks (%)	Anytime in the last 12 months (%)	Symptom better away from building (%)
Wheeze	14	39	24
Chest tightness	20	45	28
Shortness of breath attacks	17	39	25
Coughing attack	25	51	33
Awakened by breathing	7	20	8
Shortness of breath when hurrying on level ground or walking up a slight hill	22	48	18
Fever and chills	12	37	16
Flu like achiness	23	60	19
Cough w/phlegm	23	51	22
Fatigue	32	56	34
Pneumonia	1	4	—
A cold	13	65	—
Nasal symptoms	44	81	49
Sinus	30	63	33
Watery, itchy eyes	36	64	42
Throat symptoms	29	58	39
Drowsiness	33	61	42
Headache	40	70	42
Rash or itchy skin	20	37	20

Table 4a. Reported symptoms of lower respiratory disease by floor among DRS<sup>a</sup> participants.

Floor	Three or more of the first six symptoms in the past 12 months from table 3a <sup>b</sup> Number (%)	Two systemic symptoms <sup>c</sup> in the past 12 months Number (%)
5	9 (39)	10 (43)
6	30 (39)	25 (33)
14	39 (50)	22 (28)
15	41 (45)	32 (35)
16	15 (48)	10 (32)
17	37 (40)	24 (26)
18	25 (48)	21 (40)
19 and 20	24 (47)	18 (35)

<sup>a</sup> Floor at time of survey. Four DRS employees reported working on non-DRS floors and were excluded from this analysis.

<sup>b</sup> Wheeze, chest tightness, shortness of breath attacks, coughing attack, awakened by breathing, and shortness of breath when hurrying on level ground or walking up a slight hill.

<sup>c</sup> Fever and chills, and flu-like achiness.

Table 5a. Reported symptoms of upper respiratory disease by floor among DRS<sup>a</sup> participants.

Floor	Nasal symptoms in the past 12 months Number (%)	Sinus problems in the past 12 months Number (%)
5	19 (83)	17 (74)
6	66 (87)	52 (68)
14	64 (82)	49 (63)
15	73 (80)	52 (57)
16	23 (74)	15 (48)
17	67 (73)	50 (54)
18	47 (90)	43 (83)
Floors 19 and higher	38 (75)	29 (57)

<sup>a</sup> Floor at time of survey. Four DRS employees reported working on non-DRS floors and were excluded from this analysis.

## **Appendix B - Results for DSS Questionnaire Survey September 11-14, 2001**

### **Questionnaire Administration:**

The questionnaire (Appendix C) was offered to all current employees and was administered to groups of about 50 employees at a time. DSS staff scheduled the groups of employees. During each group session, NIOSH staff described the purpose of the survey, the consent process, and reviewed each question on the survey using overhead transparencies as the participants completed them. Staff from the Division of Occupational and Environmental Medicine (DOEM) at the University of Connecticut and the Connecticut Department of Public Health assisted with the survey. DSS provided time for employees to complete the survey and provided conference room space. The questionnaires were brought back to Morgantown, West Virginia and scanned into a computer database.

### **Results:**

#### **Participation:**

Of the DSS employees offered the survey, 58% (365 of 633) participated. Of the 365 DSS employees who completed the survey, 40% were male and 60% female. Their average age was 47 years and they had worked in the building for an average of nearly six years. Thirty-four percent reported having ever smoked and 12% smoked at the time of the survey. (Table 1b).

#### **Reported respiratory disease**

Of the DSS participants in the survey, 15% reported ever having asthma and 12% reported current asthma. Fifteen percent indicated that they currently use asthma medication. Of the 44 currently asthmatic employees in DSS, 14 reported developing their asthma after beginning work in the Sigourney Street facility. These are referred to as having "post occupancy current asthma." Three individuals reported having a physician diagnosis of sarcoidosis, and 1 reported having hypersensitivity pneumonitis. Table 2b provides further details regarding the prevalence of these conditions among DSS employees occupying the building.

#### **Reported symptoms**

Employees were asked whether they had experienced a variety of symptoms which can be associated with asthma, other lung disease, rhinitis or sinusitis, and irritation of mucus membranes. Table 3b lists all the symptoms and indicates the percentage of individuals reporting that they had experienced these ever in the last 12 months, more recently and frequently (once or more per week for the past four weeks), and whether they perceived these symptoms to be better when they were away from the building.

Up to 20% of DSS employees reported one or more lower respiratory tract symptoms (i.e. first six symptoms in Table 3) that have occurred in the past month at least once per week. Over 10% noted wheezing or chest tightness which had occurred in the past twelve months and improved away from the building. More than 40% noted nasal symptoms in the last four weeks. Twenty-six percent noted sinus problems in the past twelve months which improved when they were not in the building. A substantial number of individuals noted symptoms that improve when away from work.



#### Distribution of symptoms within the building

We examined the distribution of symptoms within the building. Table 4b demonstrates the number of individuals with three or more lower respiratory disease symptoms (e.g., wheeze, chest tightness, shortness of breath attacks, coughing attack, awakened by breathing difficulty, and shortness of breath when hurrying on level ground or walking up a slight hill) by floor. On the floors occupied by DSS employees, between 24 and 35% report three or more of these symptoms. Between 35 and 65% also report one or more systemic symptom, which include fever and chills and flu like achiness.

Table 5b demonstrates the number of individuals with nasal and sinus symptoms by floor. Between 69% and 81% of participants on each floor reported nasal symptoms. Between 51% and 67% of the participants reported sinus symptoms in the last 12 months.

Table 1b. Demographics of participants among DSS (Total = 365)

Gender	
Male	40%
Age (mean +/- SD)	
47 +/- 8.5	
Smoking	
Ever	34%
Current	12%
Tenure (mean +/- SD)	
5.7 +/- 2.3	

Table 2b. Diagnoses and medication use among DSS. (Total = 365)

	Number (%)
Diagnoses	
Asthma	55 (15)
Current asthma	44 (12)
Post-occupancy current asthma	14 (4)
HP	1 (<1)
Sarcoidosis	3 (1)
Medications <sup>a</sup>	
Asthma medications	55 (15)
Antihistamines	105 (29)

<sup>a</sup> Used in the past 12 months.

Table 3b. Reported symptoms among DSS participants.

	Once or more per week in the last 4 weeks (%)	Anytime in the last 12 months (%)	Symptom Better Away From Building
Wheeze	9	29	11
Chest tightness	15	30	13
Shortness of breath attacks	12	25	11
Coughing attack	18	41	22
Awakened by breathing	3	10	2
Shortness of breath when hurrying on level ground or walking up a slight hill	20	37	8
Fever and chills	6	28	10
Flu like achiness	32	52	15
Cough w/phlegm	18	42	12
Fatigue	24	46	24
Pneumonia	1	3	—
A cold	12	59	—
Nasal symptoms	41	75	37
Sinus	33	59	26
Watery, itchy eyes	36	59	33
Throat symptoms	28	50	26
Drowsiness	33	57	38
Headache	40	70	33
Rash or itchy skin	13	29	10

Table 4b. Reported symptoms of lower respiratory disease by floor among DSS <sup>a</sup> participants.

	Three or more of the first six symptoms in the past 12 months from table 3b <sup>b</sup> Number (%)	Two systemic symptoms <sup>c</sup> in the past 12 months Number (%)
Floor 7	23 (29)	21 (27)
Floor 8	15 (31)	9 (18)
Floor 9	24 (35)	16 (23)
Floor 10	22 (29)	22 (29)
Floor 11	17 (35)	11 (22)
Floor 12	8 (24)	6 (18)

<sup>a</sup> Floor at time of survey. Two DSS employees reported working on non-DSS floors and were excluded from this analysis.

<sup>b</sup> Wheeze, chest tightness, shortness of breath attacks, coughing attack, awakened by breathing, and shortness of breath when hurrying on level ground or walking up a slight hill.

<sup>c</sup> Fever and chills and flu like achiness.

Table 5b. Reported symptoms of upper respiratory disease by floor among DSS <sup>a</sup> participants.

	Nasal symptoms in the past 12 months Number (%)	Sinus problems in the past 12 months Number (%)
Floor 7	59 (75)	44 (56)
Floor 8	34 (69)	27 (55)
Floor 9	51 (74)	46 (67)
Floor 10	61 (81)	48 (64)
Floor 11	38 (78)	25 (51)
Floor 12	24 (71)	20 (59)

<sup>a</sup> Floor at time of survey. Two DSS employees reported working on non-DSS floors and were excluded from this analysis.